



The Hebrew University of Jerusalem

Syllabus

ORGANIC CHEMISTRY B - 64311

Last update 03-09-2018

HU Credits: 4

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: School of Pharmacy

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: Ein Karem

Course/Module Coordinator: Dr. Dmitry Tselikhovsky

Coordinator Email: dmitryt@ekmd.huji.ac.il

Coordinator Office Hours: In coordination with a lecturer

Teaching Staff:

Prof Dmitry Tselikhovsky
Mr. David Lankri

Course/Module description:

The course provides students with basic knowledge in organic chemistry. The course includes terminology methods, the properties and important reactions of families with the following functional groups: alkanes, alkenes and Alkynes, Haloalkanes, aromatic systems, alcohols, ethers, aldehydes and ketones.

Course/Module aims:

The course provides the students with basic knowledge of organic chemistry that will enable them to cope with understanding the synthesis concepts

Learning outcomes - On successful completion of this module, students should be able to:

On successful completion of this module, students should be able to: 1) Identify functional groups and remember their most important reactions. 2) Examine an organic molecule and construct its systematic name. 3) Suggest reagents and plan a practical way to synthesize desired organic molecules.

Attendance requirements(%):

None

Teaching arrangement and method of instruction: 3 hours lecture and one hour exercise

Course/Module Content:

1. Reactions of Alcohols, Ethers, Epoxides and Thiols
 - Nucleophilic substitution reactions: forming Alkyl halides
 - Elimination reactions: Dehydration
 - Oxidation
 - Reactions of ethers and epoxides
 - Thiols
2. Organometallic Compounds
3. Reactions of Aldehydes and Ketones
 - Nomenclature of aldehydes and ketones
 - Structures
 - Physical properties

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- Relative reactivity of carbonyl compounds
 - Reaction with nucleophiles

4. Reactions at the α -Carbon of Carbonyl Compounds

- Acidity of an α -Hydrogens
- Keto-Enol Tautomerism
- Halogenation of the α -Carbon of Aldehydes and Ketones
- Enolate ion
- Alkylation of the α -Carbon of Aldehydes and Ketones
- Enamines
- Michael Reactions
- Aldol addition
- Claisen Condensation

5. Reactions of Carboxylic Acids and Carboxylic Derivatives

- Nomenclature
- Structures
- Physical properties
- Relative reactivity of acids and derivatives
- Nucleophilic additions-elimination reactions
- Acyl chlorides
- Esters
- Hydrolysis and Esterification

6. Aromatic compounds

- Nomenclature
- Reactions

7. Dienes

- Nomenclature
- Reactions

Required Reading:

Textbook-Paula Yurkanis Bruice (updated version)

Additional Reading Material:

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Course/Module evaluation:

End of year written/oral examination 100 %

Presentation 0 %

Participation in Tutorials 0 %

Project work 0 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:

The obligation to submit 80% of the exercises.